

-46-

CLAIMS:

1 1. A method for assessing prostanoid response status in an individual to be
2 tested comprising

3 (a) comparing

4 (i) a test polymorphic pattern comprising at least one
5 polymorphic position within a prostaglandin receptor gene
6 of the individual, with

7 (ii) a reference polymorphic pattern derived from a population
8 of individuals exhibiting a predetermined prostanoid
9 response status; and

10 (b) concluding whether the individual possesses the prostanoid
11 response status based on whether the test pattern matches the reference pattern.

1 2. The method according to claim 1, wherein the predetermined prostanoid
2 response status is predisposition to glaucoma.

1 3. The method according to claim 1, wherein the predetermined prostanoid
2 response status is predisposition to hypertension.

1 4. The method according to claim 1, wherein the predetermined prostanoid
2 response status is responsivity to synthetic prostaglandin analogues.

1 5. The method according to claim 1, wherein the reference pattern
2 comprises at least two polymorphisms.

1 6. The method according to claim 5, wherein the reference pattern
2 comprises at least three polymorphisms.

1 7. A kit for assessing prostanoid response status comprising

-47-

2 (a) sequence determination oligonucleotides and

3 (b) sequence determination reagents,

4 wherein the primers are selected from the group consisting of primers that hybridize to or
5 immediately adjacent to a polymorphic position in a human prostaglandin receptor gene.

1 8. The kit of claim 7, wherein the prostaglandin receptor is an FP
2 prostaglandin receptor.

1 9. The kit of claim 8, wherein the polymorphism is of a nucleotide selected
2 from the group consisting of nucleotide numbers 63, 213, 465, 573, and 1012 of a nucleic acid
3 sequence as depicted in Figure 1 (SEQ ID NO:1).

1 10. The kit of claim 7, wherein the prostaglandin receptor is an EP-1
2 prostaglandin receptor.

1 11. The kit of claim 7, wherein the polymorphism is of a nucleotide selected
2 from the group consisting of nucleotide numbers 211, 264, 689, 690, 767, 816, and 999 of a
3 nucleotide sequence as depicted in Figure 2 (SEQ ID NO:3).

1 12. An isolated nucleic acid encoding a human FP prostaglandin receptor
2 comprising the sequence depicted in Figure 1 (SEQ ID NO:2), wherein said sequence comprises
3 one or more residues selected from the group consisting of: a T residue at position 63; a T
4 residue at position 213; an A residue at position 465; a G residue at position 573; and a G residue
5 at position 1012.

1 13. A nucleic acid as defined in claim 12, wherein said nucleic acid is DNA.

1 14. A nucleic acid as defined in claim 12, wherein said nucleic acid is RNA.

-48-

- 1 15. A recombinant DNA vector comprising a nucleic acid as defined in claim
2 12 operably linked to a transcription regulatory element.
- 1 16. A cell comprising a DNA vector as defined in claim 15, wherein said cell
2 is selected from the group consisting of bacterial, fungal, plant, insect, and mammalian cells.
- 1 17. A method for producing a polypeptide, said method comprising culturing a
2 cell as defined in claim 16 under conditions that permit expression of one or more polypeptides
3 encoded by said nucleic acid.
- 1 18. An isolated polypeptide having an amino acid sequence depicted in Figure
2 1 (SEQ ID NO:2), wherein said polypeptide comprises any one or both of residues Ile₁₅₅ and
3 Val₃₃₈.
- 1 19. A method of screening for a candidate compound that interacts with a
2 human FP prostaglandin receptor comprising detecting binding of the polypeptide of claim 18
3 with the compound.
- 1 20. An isolated nucleic acid encoding a human EP-1 prostaglandin receptor
2 comprising the sequence depicted in Figure 2 (SEQ ID NO:4), wherein said sequence comprises
3 one or more residues selected from the group consisting of: a G residue at position 211; a T
4 residue at position 264; a T residue at position 689; an A residue at position 690; a G residue at
5 position 767; a T residue at position 816; and an A residue at position 999.
- 1 21. A nucleic acid as defined in claim 20, wherein said nucleic acid is DNA.
- 1 22. A nucleic acid as defined in claim 20, wherein said nucleic acid is RNA.

-49-

1 23. A recombinant DNA vector comprising a nucleic acid as defined in claim
2 20 operably linked to a transcription regulatory element.

1 24. A cell comprising a DNA vector as defined in claim 23, wherein said cell
2 is selected from the group consisting of bacterial, fungal, plant, insect, and mammalian cells.

1 25. A method for producing a polypeptide, said method comprising culturing a
2 cell as defined in claim 24 under conditions that permit expression of one or more polypeptides
3 encoded by said nucleic acid.

1 26. An isolated polypeptide having an amino acid sequence depicted in Figure
2 2 (SEQ ID NO:4), wherein said polypeptide comprises any one or more of residues Ala₇₁; Leu₂₃₀;
3 and Arg₂₅₆.

1 27. A method of screening for a candidate compound that interacts with a
2 human EP-1 prostaglandin receptor comprising detecting binding of the polypeptide of claim 26
3 with the compound.